National Institute of Environmental Health Sciences

Development and disintegration of Maya political systems in response to climate change

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Abstract:

The role of climate change in the development and demise of Classic Maya civilization (300 to 1000 C.E.) remains controversial because of the absence of well-dated climate and archaeological sequences. We present a precisely dated subannual climate record for the past 2000 years from Yok Balum Cave, Belize. From comparison of this record with historical events compiled from well-dated stone monuments, we propose that anomalously high rainfall favored unprecedented population expansion and the proliferation of political centers between 440 and 660 C.E. This was followed by a drying trend between 660 and 1000 C.E. that triggered the balkanization of polities, increased warfare, and the asynchronous disintegration of polities, followed by population collapse in the context of an extended drought between 1020 and 1100 C.E.

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Resource Description

Exposure : ☑

weather or climate related pathway by which climate change affects health

Extreme Weather Event, Food/Water Security, Human Conflict/Displacement, Human Conflict/Displacement, Other Exposure

Extreme Weather Event: Drought

Food/Water Security: Agricultural Productivity

Other Exposure: paleoclimatology

Geographic Feature: ☑

resource focuses on specific type of geography

None or Unspecified

Geographic Location: ☑

resource focuses on specific location

Non-United States

Non-United States: Non-U.S. North America

Health Impact:

specification of health effect or disease related to climate change exposure

Morbidity/Mortality

Resource Type:

format or standard characteristic of resource

Research Article, Research Article

Timescale:

time period studied

Time Scale Unspecified